

3.13 SOCIOECONOMICS/ENVIRONMENTAL JUSTICE

Under NEPA, “economic” and “social” effects are environmental consequences to be examined (40 CFR Section 1502.16 and 40 CFR Section 1508.8). Under CEQA, the focus of an EIR is primarily on potential changes to the “physical conditions,” which include land, air, water, flora, fauna, population, housing, noise, and objects of historic or aesthetic significance (PRC Section 21060.5; CCR Title 14 Section 15358(b) and Section 15382). The proposed project is to enhance and restore the physical and biological functions and services of San Elijo Lagoon by increasing the tidal prism to support a diverse range of native intertidal and transitional habitats, and there would be no physical changes to population or housing.

In addition to examining potential social and economic impacts to local and regional populations as a whole, any NEPA document must consider the potential for disproportionate environmental impacts to minority or low-income populations, as well as potential disproportionate environmental health and safety risks to children, in order to comply with relevant federal executive orders. Those analyses are contained in Section 3.13.6 of this EIS/EIR, but the supporting demographic information on population, ethnicity, and income is provided in this section.

The primary social and economic-related focus of the proposed project, as stated in the Purpose and Need of this EIS/EIR (Section 1.2), is intended to enhance a valuable public resource that serves local residents in a number of ways. These include maintaining more than 7 miles of public hiking trails for recreational activities within habitation areas for sensitive species, including endangered plants and animals, and resident and migratory wildlife, thereby providing benefits to the entire regional economy.

This section also presents information on commercial fisheries, the local social and economic sector most likely to be adversely impacted by the materials disposal/reuse component of the proposed project. During the 2012 RBSP impact analysis, stakeholder concerns regarding sand movement and potential impacts to commercial fishing resources were addressed. Since this project includes sand placement at a number of the same sites in the region, fisheries information from the 2012 RBSP is referenced and certain data are updated.

This section contains census data regarding population and income. Commercial fisheries and the relative economic value of various species are discussed in Section 3.13.3. Kelp harvesting value is addressed in Section 3.13.3, followed by recreational fishing and diving value in Section 3.13.4.

3.13.1 AFFECTED ENVIRONMENT

In terms of its broad economic contribution, San Elijo Lagoon provides habitat for sensitive species, including endangered plants and animals, and resident and migratory wildlife. San Elijo Lagoon also offers 7 miles of public hiking trails for recreational activities to local community members and visitors, providing benefits to the entire regional economy.

To provide a localized socioeconomic context for the proposed project, this section presents information on population and income in the project area for two distinct geographies: (1) the area immediately surrounding the lagoon that may be affected by lagoon restoration activities, and (2) the area immediately surrounding materials disposal/reuse sites along the San Diego County coast.

To meet the specific intent of Executive Order 12898 on Environmental Justice (59 *Federal Register* 7629 (1994)), it is necessary to consider the minority and economic status of the population surrounding the San Elijo Lagoon restoration area and materials placement sites. To allow for a subsequent assessment of potential disproportionate impacts to minority populations and low-income populations, it is necessary to compare the same type of demographic and income information for the local jurisdiction and larger region. Therefore, these data provide information on population, ethnicity, median income, and poverty for the area around San Elijo Lagoon and each of the placement sites compared to the local jurisdiction and the San Diego County region. Housing and employment data, often presented in socioeconomic sections of NEPA documents, are not provided in this section as the proposed project is not considered likely to have any direct impact on either housing or employment in the immediate area. Potential positive benefits to employment as a result of construction (temporary) and enhanced recreational and tourism opportunities (long-term) would likely be felt at a regional level.

Census tracts are the standard localized units of land-based analysis for these types of data. The San Elijo Lagoon restoration area is contained within five census tracts, while the materials disposal/reuse study area spans eight census tracts. These census tracts are listed in Table 3.13-1. Some tracts contain all or portions of more than one placement site and some placement sites straddle two census tracts. Some of the census tracts located within the San Elijo Lagoon study area overlap with some census tracts containing disposal/placement sites.

The data presented in this section for census tracts, local jurisdictions, and the region as a whole are from the U.S. Census 2010 100 percent survey or the U.S. Census American Community Survey 2006-2010 5-Year Estimates, depending on data availability.

Table 3.13-1
Census Tract Numbers and Jurisdictional City Boundaries
for San Elijo Lagoon and Proposed Materials Placement Sites

City	Census Tract	Study Area
Encinitas; Solana Beach	173.03	San Elijo Lagoon Study Area
Encinitas; Solana Beach	173.05	San Elijo Lagoon Study Area
Encinitas	174.01	San Elijo Lagoon Study Area
Encinitas	174.04	San Elijo Lagoon Study Area
Encinitas; Rancho Santa Fe; Unincorporated San Diego County	171.06	San Elijo Lagoon Study Area
Encinitas; Solana Beach	173.03	Proposed Materials Placement Site: Cardiff Beach
Encinitas	177.02	Proposed Materials Placement Site: Moonlight
Encinitas	175.01	Proposed Materials Placement Site: Moonlight
Solana Beach	173.04	Proposed Materials Placement Site: Solana Beach
Del Mar	172	Proposed Materials Placement Site: Solana Beach
Encinitas; Solana Beach	173.03	Proposed Materials Placement Site: Solana Beach
Encinitas; Carlsbad	177.01	Proposed Materials Placement Site: Leucadia
San Diego	83.12	Proposed Materials Placement Site: Torrey Pines

Source: U.S. Census Bureau 2010

San Elijo Lagoon Study Area

Population/Ethnicity

Table 3.13-2 shows population characteristics, including total population and race/ethnic distribution, for the census tracts contiguous with the San Elijo Lagoon study area. The table also provides the same ethnic and racial information for adjacent jurisdictions as well as at the county level to facilitate comparison between the affected area and a broader context.

As shown, the total population within the census tracts of the San Elijo Lagoon study area ranges from 2,969 in tract 173.05 to 6,338 in tract 174.04. The minority population includes those who self-identify as Black, Hispanic, Native American, Asian, Native Hawaiian, “some other race,” and “two or more races.” Minority populations within the San Elijo Lagoon study area range from 12.1 percent within tract 171.06 to 23.2 percent within tract 174.04. Those who self-identify as Hispanic make up the majority of the minority population within the San Elijo Lagoon study area, ranging from 40.3 percent of the minority population within tract 173.05, to 71.1 percent within tract 174.04. The minority populations of Encinitas, Rancho Santa Fe, and Solana Beach are 21.2 percent, 10.6 percent, and 22.7 percent, respectively. In San Diego County, 1,595,266 or 51.5 percent of the population is minority, with 62.1 percent of minorities self-identifying as Hispanic. When compared to the population of greater San Diego County, only census tract 174.04 has a proportion higher than its adjacent jurisdiction (Encinitas). However, the percentage of minority residents is substantially lower than the proportion seen at the county level; those census tracts composing the San Elijo Lagoon study area cannot be considered a high minority population area.

Table 3.13-2
Population and Ethnicity for San Elijo Lagoon Study Area

Study Area		City	White	Black	Hispanic	Other	Total	Total Minority	Percent Minority
Tract	171.06	Encinitas; Rancho Santa Fe; Unincorporated San Diego County	4,372	17	321	263	4,973	601	12.1%
	173.03	Encinitas; Solana Beach	2,557	10	283	168	3,018	461	15.3%
	173.05	Encinitas; Solana Beach	2,542	13	172	242	2,969	427	14.4%
	174.01	Encinitas	4,600	21	375	359	5,355	755	14.1%
	174.04	Encinitas	4,868	29	1,045	396	6,338	1,470	23.2%
City	Encinitas		46,881	316	8,138	4,183	59,518	12,637	21.2%
	Rancho Santa Fe		2,788	10	176	143	3,117	329	10.6%
	Solana Beach		9,944	56	2,048	819	12,867	2,923	22.7%
County	San Diego County		1,500,047	146,600	991,348	457,318	3,095,313	1,595,266	51.5%

Source: U.S. Census Bureau 2010

Income

Information on median household income, total in poverty, and percentage in poverty in the census tracts, jurisdictional cities contiguous with the San Elijo Lagoon study area, and the whole of San Diego County, is presented in Table 3.13-3.

**Table 3.13-3
Median Household Income and Poverty Rates for San Elijo Lagoon Study Area**

Study Area		City	Median Household Income	Total in Poverty	Percentage in Poverty
Tract	171.06	Encinitas; Rancho Santa Fe; Unincorporated San Diego County	\$139,444	268	6.5%
	173.03	Encinitas; Solana Beach	\$121,676	427	12.4%
	173.05	Encinitas; Solana Beach	\$90,430	77	2.7%
	174.01	Encinitas	\$88,342	688	12.2%
	174.04	Encinitas	\$84,744	314	5.0%
City	Encinitas		\$86,845	4,654	8.0%
	Rancho Santa Fe		\$188,859	92	3.2%
	Solana Beach		\$86,845	966	7.6%
County	San Diego County		\$63,069	361,248	12.3%

Source: U.S. Census Bureau 2010

The median household income of the San Elijo Lagoon study area by tract ranges from \$84,744 in tract 174.04 to \$139,444 in tract 171.06. The median household income is \$86,845 in Encinitas, \$86,845 in Solana Beach, and \$188,859 in Rancho Santa Fe. The San Diego County median household income is \$63,069. The total households in poverty by tract range from 77 or 2.7 percent of tract 173.05, to 688 or 12.2 percent of tract 174.01. The highest percentage of households in poverty is within tract 173.03 at 12.4 percent or 427 households. Rancho Santa Fe has 92 households or 3.2 percent of its population in poverty, Solana Beach has 966 households or 7.6 percent of its population in poverty, and Encinitas has 4,654 households or 8.0 percent of its population in poverty. Within the whole of San Diego County, 361,248 households are living in poverty, representing 12.3 percent of the total population. As these data illustrate, the number of households in poverty within the tracts and jurisdictional cities contiguous with the San Elijo Lagoon study area is less than overall San Diego County, with the exception of tract 173.03 with a 0.1 percent higher poverty rate. When compared to the median household income and poverty rates of greater San Diego County, the census tracts and jurisdictions contiguous with the San Elijo Lagoon study area cannot be considered a high poverty area.

Materials Disposal/Reuse Study Area

Population/Ethnicity

Table 3.13-4 shows population characteristics, including total population and race/ethnic distribution, for the census tracts contiguous to the possible materials placement sites. The table also provides the same ethnic and racial information for adjacent jurisdictions as well as at the county level to facilitate comparison between the affected area and a broader context.

As shown in Table 3.13-4, the total population within the census tracts of the materials placement study area ranges from 2,777 in tract 177.02 to 5,275 in tract 177.01. The minority population, which includes those who self-identify as Black, Hispanic, Native American, Asian, Native Hawaiian, “some other race,” and “two or more races,” percentage within the materials placement study area ranges from 10.3 percent within track 172 to 49.6 percent within tract 173.04. Those who self-identify as Hispanic make up the majority of the minority population within the materials placement study area, ranging from 39.9 percent of the minority population within tract 83.12 to 82.2 percent within tract 173.04. The minority populations of Del Mar, Encinitas, Solana Beach, Carlsbad, and San Diego are 9.3 percent, 21.2 percent, 22.7 percent, 25.1 percent, and 54.9 percent, respectively. In San Diego County, 1,595,266 or 51.5 percent of the population is minority, with 62.1 percent of minorities self-identifying as Hispanic. When compared to their respective containing jurisdictions, census tract 173.04 has a much higher proportion of minority residents than Solana Beach, with a difference of 26.9 percent. This can be likely attributed to Eden Gardens, a historic barrio in Solana Beach with an origin traced to Mexican farmers hired by neighboring ranch owners in the 1920s. Although the percentage is lower than what is present for the region, census tract 173.04 is considered a high minority population area for the purposes of environmental justice analyses.

Income

Information on median household income in the census tracts contiguous with the placement sites, as well as median incomes and poverty rates of the contiguous jurisdictional cities and the county in general, is presented in Table 3.13-5.

Table 3.13-4
Population and Ethnicity for Materials Placement Study Area

Study Area		City	White	Black	Hispanic	Other	Total	Total Minority	Percent Minority
Tract	83.12	San Diego	2,968	21	264	376	3,629	661	18.2%
	172	Del Mar	3,758	9	175	204	4,146	388	10.3%
	173.03	Encinitas; Solana Beach	2,557	10	283	168	3,018	461	15.3%
	173.04	Solana Beach	3,681	20	1,501	306	5,508	1,827	49.6%
	175.01	Encinitas	2,374	13	226	156	2,769	395	16.6%
	177.01	Encinitas; Carlsbad	3,997	30	937	311	5,275	1,278	24.2%
	177.02	Encinitas	2,329	3	310	135	2,777	448	16.1%
City	Del Mar		3,772	9	175	205	4,161	389	9.3%
	Encinitas		46,881	316	8,138	4,183	59,518	12,637	21.2%
	Solana Beach		9,944	56	2,048	819	12,867	2,923	22.7%
	Carlsbad		78,879	1,232	13,988	11,229	105,328	26,449	25.1%
	San Diego		589,702	82,497	376,020	259,183	1,307,402	71,770	54.9%
County	San Diego County		1,500,047	146,600	991,348	457,318	3,095,313	1,595,266	51.5%

Source: U.S. Census Bureau 2010

Table 3.13-5
Median Household Income and Poverty Rates for Materials Placement Study Area

Study Area		City	Median Household Income	Total in Poverty	Percentage in Poverty
Tract	83.12	San Diego	\$138,703	126	4.0%
	172	Del Mar	\$112,566	148	3.7%
	173.03	Encinitas; Solana Beach	\$121,676	427	12.4%
	173.04	Solana Beach	\$68,606	405	8.0%
	175.01	Encinitas	\$69,643	314	12.2%
	177.01	Encinitas; Carlsbad	\$78,279	615	12.4%
	177.02	Encinitas	\$57,602	236	8.6%
City	Del Mar		\$112,566	148	3.7%
	Encinitas		\$86,845	4,654	8.0%
	Solana Beach		\$86,908	966	7.6%
	Carlsbad		\$84,728	7,179	7.2%
	San Diego		\$62,480	174,763	14.1%
County	San Diego County		\$63,069	361,248	12.3%

Source: U.S. Census Bureau 2010

The median household income of the materials placement study area by tract ranges from \$57,602 in tract 177.02 to \$138,703 in tract 83.12. The median household income is \$62,480 in San Diego, \$84,728 in Carlsbad, \$86,845 in Encinitas, \$86,908 in Solana Beach, and \$112,566 in Del Mar. The San Diego County median household income is \$63,069. The total number of households in poverty by tract range from 126 (4.0 percent) of tract 83.12, to 615 (12.4 percent) of tract 177.01. The highest percentage of households in poverty is 12.4 percent in both tracts 173.03 and 177.01. Del Mar has 148 households or 3.7 percent of its population in poverty, Carlsbad has 7,179 or 7.2 percent, Solana Beach has 966 or 7.6 percent, Encinitas has 4,654 or 8.0 percent, and San Diego has 174,763 or 14.1 percent. Within the whole of San Diego County, 361,248 households are living in poverty, representing 12.3 percent of the total population. As these data illustrate, the number of households in poverty within the tracts and jurisdictional cities contiguous with the materials placement study area are analogous to overall San Diego County, with the exception of tracts 173.03, 177.01, and the City of San Diego, which have a 0.1, 0.1, and 1.8 percent higher rate, respectively. When compared to the median household income and poverty rates of their contiguous jurisdictions and greater San Diego County, the census tracts contiguous with the materials placement study area cannot be considered a high poverty area.

Commercial Fisheries

San Diego County supports a substantial commercial fishing industry and is also a center for sport and recreational fishing and diving activities. This section describes the commercial fishing activity in the San Diego region and in offshore areas, specific to the SO-5, SO-6, and LA-5

materials stockpiling and disposal sites. The information presented in this section has been taken largely from the 2012 RBSP, which assessed the impacts to commercial fisheries as a result of the dredging and materials transportation activities associated with that project (SANDAG 2011). As discussed elsewhere in this report, SO-5 and SO-6 were borrow sites assessed during the 2012 RBSP analysis; thus, the commercial fisheries description here is applicable and relevant to the proposed SELRP. The primary information referenced here was gathered from CDFW catch statistics, recent work conducted by CDFW for the Marine Life Protection Act, NMFS, and the San Diego Unified Port District (SDUPD).

Regional Overview

Historically, the commercial fishing industry has played a major, although declining, role in the region. The San Diego County major ports include San Diego, Mission Bay, Oceanside, and Point Loma. Aquaculture takes place in Buena Vista and Agua Hedionda lagoons in Carlsbad. In 2007, there were 153 commercial vessels, 145 commercial fishermen, 53 fish-related businesses, and one aquaculture business that reported landings in these ports (California Marine Life Protection Act Initiative 2009).

Although the commercial fishing industry has seen a steady decline in recent decades, the industry is predicted to undergo a substantial revitalization. The decline of the commercial fishing industry has been attributed to competition from other areas and a variety of regulatory, economic, and environmental factors. In terms of participants, the commercial fishing industry was reduced by more than 70 percent from the late 1970s to 1998 (San Diego Unified Port District 1998). During that period, the number of fishing vessels in the San Diego region declined by about 67 percent. In the recent past, it was anticipated that an opportunity may exist for future growth. Although the number of fishing vessels and fishermen in the San Diego region declined from 1999 to 2006, a slight increase occurred from 2006 to 2007 (California Marine Life Protection Act Initiative 2009). One reason for the potential upswing was that the global appetite for seafood had more than doubled over the past 30 years, and a demand for local, sustainable seafood was growing (Unified Port of San Diego 2012).

Employment for fishers and fishing-related workers in San Diego County was projected to increase from 130 to 170 jobs by 2016, surpassing projected employment in the industry for areas such as Los Angeles County and Monterey County (California Employment Development Department 2010); however, more recent employment projections computed since the economic recession occurred suggest that employment for fishers and fishing-related workers will stay constant in San Diego County into 2018 (and actually decrease in Monterey and Los Angeles counties) (California Employment Development Department 2012). The four San Diego ports earned nearly \$200 million in the period from 1985 to 2008 (in 2009 dollars). In 2011 alone,

commercial fishing brought the region nearly \$8 million in ex-vessel value, the price paid to fishermen (California Department of Fish and Game 2012).

Several species of invertebrates and fish found in the project area are economically valuable marine resources. The composition, volume, and value of the local commercial catch have not been stable over time, however, as measured by a number of indices. The composition and relative economic importance of the local fishery has changed as well, with the largest changes attributable to the local decline of the tuna fishery. In 1950, the San Diego County area produced the second-largest volume and value of commercial fish landings among California's six primary fisheries statistical areas, accounting for 25 percent and 35 percent of the state's total commercial fishing landing volume and value, respectively. By 1996, the San Diego County statistical area had dropped to being the state's lowest producer, and area landings had declined to 3 percent of the state's total value of landings. In 2011, this percentage was similar at 3.8 percent of the state's total commercial fishing landing value (California Department of Fish and Game 2012).

In 1980, various species of tuna composed 96 percent of San Diego's volume and value of landings, which demonstrates the role of tuna in these large-scale changes. By 1990, this figure had dropped to less than 1 percent of volume and value of local landings. This trend has continued into recent years. From 1998 to 2008, species such as the California spiny lobster, red sea urchin, California sheephead, squid, and prawn-shrimp pulled in the highest dollar amount of commercial landings. In 2008, the amount of squid harvested increased tremendously in both volume and value (California Department of Fish and Game n.d.).

In the last three decades, the California fishing industry generally harvested less catch, required fewer fisherman, and utilized a smaller fleet in both boat length and numbers to bring the catch to port. Locally, the number of fisherman and boats has declined significantly, but the value of the landings declined only slightly from the 1980s to 1990s (San Diego Unified Port District 1998). Following this trend, the volume of landings in the region decreased slightly from 2000 to 2008, but the total value of landings increased by 9 percent (CDFG n.d.) and was nearly \$205 million in 2011 (CDFG 2012).

In addition to fishery data provided by SDUPD, more specific and regional fishery data are provided by CDFW. These include annual commercial fishery catch and landings in volume (pounds) and value (dollars) by a number of species. Landings are reported by area and port, and catch data are reported by fish block. Fish blocks are statistical areas normally 10 minutes of longitude by 10 minutes of latitude, with blocks adjacent to shore being somewhat smaller, with the area of specific blocks determined by how the shoreline intersects the block area.

Relevant fish blocks and their corresponding shorelines within the project area include blocks 842 (Torrey Pines to Del Mar), 821 (Encinitas), and 878 (offshore, west of Chula Vista and Imperial Beach). Proposed offshore stockpiling site SO-5 is located in fish block 842, offshore stockpiling site SO-6 is located in fish block 821, and materials disposal site LA-5 is located in fish block 878. All fishing gear types are combined and include hook and line, longline, troll, harpoon, trap, seine, and trawl. Assignment of a species to a specific block is not always completely accurate, and fluctuations in annual catches are substantial. Determining the cause of these fluctuations can be difficult due to the complex set of variables that affect fish movements and abundance.

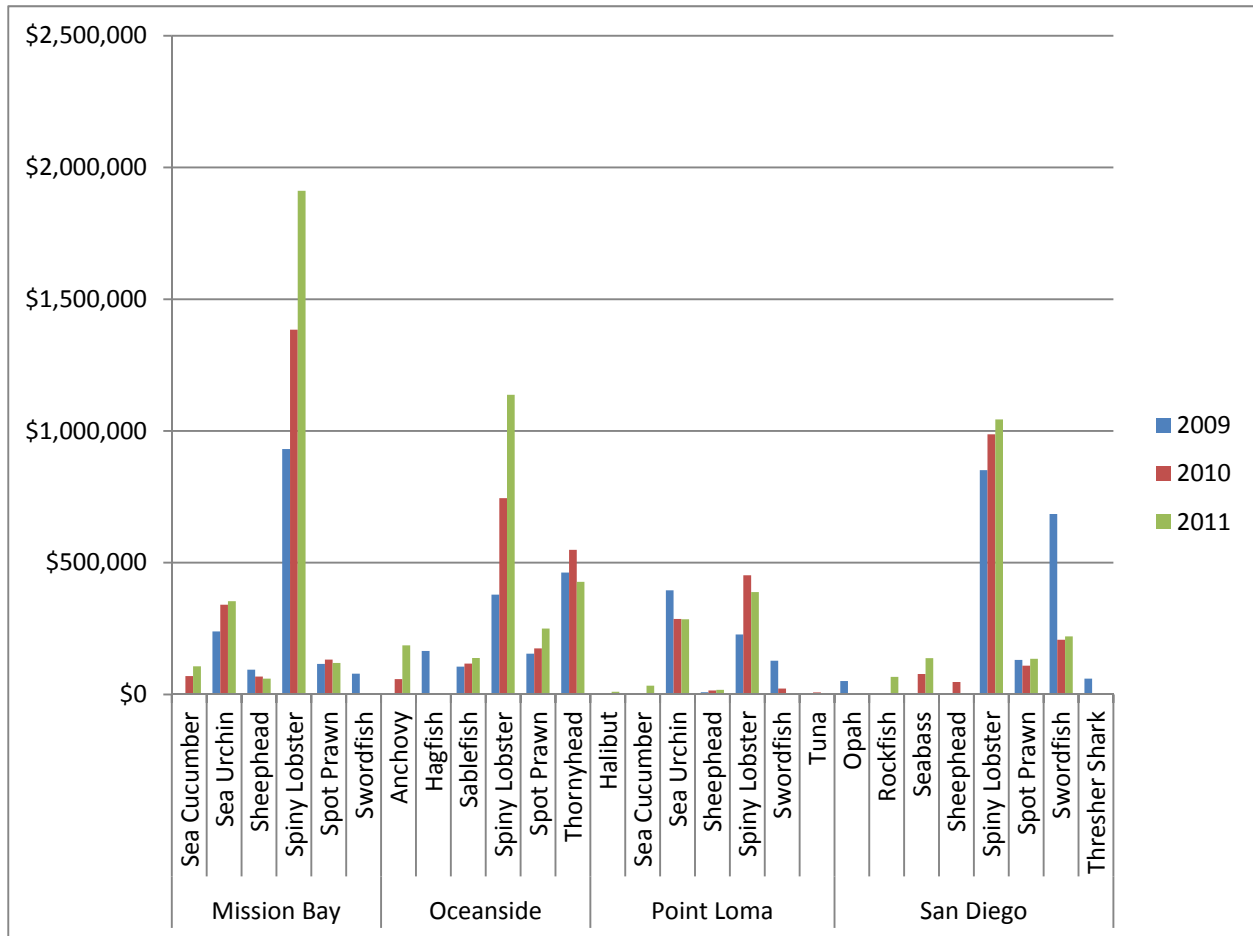
San Diego Commercial Fishing Catch Volume and Value for Nearshore or Potential Nearshore Species by Port

Recently compiled data for the 2012 RBSP showed that the total value of San Diego County commercial landings from 1999 to 2008 for species that occur nearshore or potentially nearshore was \$38 million, or an annual average of \$3.8 million (SANDAG 2011). This dollar amount is ex-vessel value (e.g., whole fish, wholesale price), and the final economic value is about four to five times higher. During this period, commercial landings at Oceanside represented 34.5 percent of the total San Diego County landings. The commercial catch and value changes significantly from year to year. For example, the value of landings for San Diego County in 2008 was \$2.5 million (Port of San Diego plus Oceanside), with Oceanside representing 60 percent of the total. This was in sharp contrast to 1999 when the total landings were \$1.1 million with Oceanside accounting for 22.1 percent of that figure.

Figure 3.13-1 shows recent data for the period 2009 to 2011 for the top five species (by value) for the four major ports in San Diego County: Mission Bay, Oceanside, Point Loma, and San Diego. Even limited to the top five species per year, the annual average value landed for these four ports averaged to just over \$6 million per year. The primary species by value was spiny lobster, which was valued annually at between approximately \$2.4 million (2009) and \$4.5 million (2011), with a 3-year total of over \$10.4 million. Sea urchin was second in value for the years 2009 to 2011, with a total of \$1.9 million over the 3-year span. Thornyhead (\$1.4 million), swordfish (\$1.34 million), and spot prawn (\$1.32 million) rounded out the top five species for total value between 2009 and 2011.

It should be noted that, unlike fish block harvest data, the commercial port landing data of nearshore or potential nearshore species for San Diego County include catch from the Channel Islands as well as from areas along the mainland. The proportion of catch attributable to areas other than the San Diego County coastline cannot be determined from available records.

Figure 3.13-1
Value for the Top Five Species, by San Diego County Port, 2009–2011



Source: CDFG 2012, 2011, 2010

Economic Importance of Nearshore Species by Fish Block

Table 3.13-6 provides information recently published as part of the 2012 RBSP analysis. The table shows a breakout of ex-vessel value of most valuable nearshore species for the relevant fish blocks for the period 1999 to 2008 to facilitate comparisons by block. Clearly, lobster and spot prawn are the most valuable in terms of dollar amount.

Table 3.13-6
San Diego County Average Landings by Fish Block for 1999 to 2008
Most Valuable Nearshore Species Average Values (U.S. Dollars)

Species	Area Name and Fish Block Number		Totals
	Encinitas/Solana Beach Block 821 (SO-6)	Del Mar/Torrey Pines Block 842 (SO-5)	
Lobster	\$226,639	\$125,563	\$352,202
Urchin	\$3,470	\$1,411	\$4,881
Rock Crab	\$3,912	\$9,133	\$13,045
Swordfish	\$0	\$1,583	\$1,583
Spot Prawn	\$1,521	\$48,714	\$50,235
Sheephead	\$6,113	\$14,754	\$20,867
Squid	\$0	\$28,530	\$28,530
Total	\$241,655	\$229,688	\$471,343

Source: SANDAG and U.S. Army Corps of Engineers 2011

In terms of geographic distribution of valuable nearshore species, the value of species caught in blocks 821 and 842 is relatively small compared to other nearby blocks, including Block 860 (La Jolla to Point Loma). As described in the 2012 RBSP, Block 860 accounted for 75.0 percent of the total value for the species listed. Within blocks 821 and 842, spiny lobster is top species in terms of value at \$352,202, which was 65.1 percent of the total value for the species listed over the 10-year span. Spiny lobster value was higher in Block 821 (64.3 percent of the value between the two blocks), while spot prawn value was substantially higher in Block 842 (96.7 percent of the value between the two blocks).

Recent data are unavailable for Block 878, in which LA-5 is located. However, the original EIR for LA-5 stated that Block 878 “has not been very productive for commercial fishing.” Specifically,

The total catch in Block 878 in 1981 amounted to approximately 235,000 pounds of fish and invertebrates. Even though it represented a four-fold increase over the 1976-77 catch, it still amounted to only one-fourth of the average catch per block in the San Diego area. Blocks 860 and 861, to the north of this block are, however, much more productive, partly due to the presence of rock substrate, kelp beds and other fish habitat. (EPA 1987)

Kelp Harvesting

Kelp harvesting operations also occur in the proposed project area. Giant kelp (*Macrocystis pyrifera*) is found all along the western coast of the United States. Off the southern California coast, kelp is found on rocky substrate in wave-exposed areas at depths of 20 to 120 feet. Areas

of particular kelp abundance in the San Diego region include La Jolla Point and Point Loma (California Marine Life Protection Act Initiative 2009). Kelp harvesting has occurred in California since 1911 and involves the use of cutter barges, which harvest the upper kelp canopy down to a depth of about 4 feet below the water surface. Kelp beds are located near some of the offshore placement sites and beaches. Kelp forests are not only important to sport fishermen, commercial fishermen, and kelp harvesters; they are also important to recreational divers, photographers, and tourists who value them for aesthetic reasons (CDFG 2004).

A number of factors can influence the vitality of kelp beds. Grazers such as the halftoon, opaleye, perch, sea urchins, and various crustaceans can affect the growth of kelp. Storms frequently pull kelp plants off the substrate. Human-caused environmental stress is brought about by pollution and sedimentation from power plants, sewage discharge, and coastal development practices (CDFG 2004). Sedimentation of the rocky bottom has also been known to retard kelp growth and bury young plants, preventing development and reproduction (Glantz 1999).

The harvesting of kelp in the state is regulated by CDFW. The State of California has imposed a number of restrictions on harvesting activities, both commercial and recreational. In recent years, the alginate industry has considerably reduced its demand for California kelp, and commercial kelp harvest (in weight) decreased by 96 percent from 2002 to 2007. The dramatic decrease in kelp harvesting after 2005 resulted from the departure of a large kelp harvesting company, which moved its operations overseas (California Marine Life Protection Act Initiative 2009).

Two kelp beds, one located from the California/Mexico international border to southern tip of San Diego Bay, and one located from the southern tip of San Diego Bay to the southern tip of Point Loma, are considered open, which means they may be harvested by anyone with a kelp harvesting license. Kelp beds at Point Loma, Mission Bay, Scripps Pier, and the San Dieguito River to middle of Loma Alta Lagoon at south Oceanside are considered leasable and provide the exclusive privilege of harvesting to the lessee (California Marine Life Protection Act Initiative 2009). Recent CDFW records suggest that Knocean Sciences, a producer of kelp oil and kelp concentrate, has an exclusive harvest agreement for kelp near Point Loma at a rate of \$3.00 per wet ton (CDFG 2012).

Recreational Fishing and Diving

A wide range of marine recreational fishing and diving opportunities exist along the San Diego coast. These include surf and shoreline fishing, pier fishing, party boat fishing, private boat fishing and diving, and skin/SCUBA diving. According to NOAA (2012), the direct economic impact of recreational fisheries in California totaled more than \$2.0 billion in 2009, with over \$1.0 billion more in value-added impacts. Of the \$2.0 billion in direct economic impact, durable

equipment accounted for \$1.5 billion, shore activities such as pier and beach fishing accounted for \$263 million, charter boats accounted for \$133 million, and private boats accounted for \$113 million. Recreational fisheries employ nearly 12,000 people in the state.

The most common target species for beach fishing were barred surfperch, yellowfin croaker, opaleye, and jacksmelt. Fishing from man-made structures target Pacific mackerel, Pacific sardine, northern anchovy, queenfish, and jacksmelt. Rented and chartered boat fishing targets offshore and pelagic species, especially mackerel, croaker, bass, and rockfish (California Marine Life Protection Act Initiative 2009). There is a small contingent of operators that specialize in half-day and 1-day charters that typically fish the nearshore areas and kelp beds. These operators target sand and kelp bass and California halibut. Oceanside Harbor has a few boats that specialize in this fishery while Mission Bay and San Diego Bay have a large charter fleet. Fishing occurs year-round in the study region, although effort markedly increases in the summer months, peaking in July. According to estimates produced by CDFW's California Recreational Fisheries Survey, over 40 percent of fishing trips occur in the months of June, July, and August (California Marine Life Protection Act Initiative 2009).

Parnell et al. (2010) conducted angler interviews in San Diego County and found differences in fishing behavior among recreational fisherman originating from the two different locations (landings). Results of the Parnell et al. (2010) study indicated fisherman launching in San Diego Bay primarily fished San Diego Bay or offshore of Point Loma, the latter primarily targeting demersal fish within the kelp forest. In contrast, fisherman launching in Mission Bay primarily fished in Mission Bay or offshore of La Jolla, primarily targeting more transitory pelagic species just offshore of the kelp forest to the edge of the nearshore shelf outside of the kelp forest. Recreational catch in San Diego from Commercial Passenger Fishing Vessel data show that an average of 54,213 anglers participated in the recreational fishery in San Diego between 2003 and 2007, catching an average of 209,540 fish.

Sport diving and spearfishing activities mostly occur in the nearshore waters, and diving trips in San Diego in the early 1990s numbered about 30,000 per year. It is assumed that this rate has increased as the rate of Professional Association of Diving Instructors (PADI) certification has increased substantially since 1990 (NMFS 1991; PADI 2012). Most diving occurs in habitats rich in marine life, especially kelp beds and rocky reefs. Much of the diving in San Diego involves trips to locations only accessible by boat, including offshore kelp beds, the vessels intentionally sunk as artificial reefs in "Wreck Alley" off of Mission Beach, and even offshore islands and banks. Shoreline diving is also popular.

The most common local beach diving locations include the submarine canyon off La Jolla Shores (where dive instruction classes are typically taught), La Jolla Cove (due to the abundant undersea

life there attributable in part to the area's protected underwater reserve status), and numerous other sites along the coast from La Jolla to Oceanside where public access to nearshore reefs is convenient. Photography, spearfishing for kelp bass and halibut, and diving for spiny lobsters are three of the more popular diving activities. Spearfishing can involve either skin diving (also known as snorkeling or free diving) or SCUBA gear. In addition to California spiny lobster, divers also harvest rock scallops, marine snails and limpets, various species of clams, and in recent years, Humboldt squid (California Marine Life Protection Act Initiative 2009). Sport diving for lobster usually involves SCUBA diving as the lobster must be captured by hand without the use of snares or any other tools, and individual lobster are often found under reef ledges, in crevices between rocks, or in other difficult to access areas. Some lobster diving takes place at night, as lobsters are more likely to leave shelter to forage and are thus easier to capture by hand. The number of lobsters caught in southern California reached an estimated peak of 12,000 in 2002, after which the number of lobsters decreased to approximately 8,000 in 2005. By 2007, the estimated number of lobsters caught by recreational divers was 10,000 (California Marine Life Protection Act Initiative 2009). In the early 1990s, diving for fish and/or lobster occurred at a rate of about 1,000 trips per month, season permitting, although that number may be higher now (Neilson 2011). The average number of divers varies according to season, weather, and sea conditions (NMFS 1991).

3.13.2 CEQA THRESHOLDS OF SIGNIFICANCE

The primary focus of this impact analysis is the socioeconomic effect to commercial fisheries, kelp harvesting, and recreational fishing/diving from a NEPA perspective. There would be no substantial difference in effect based on season of construction because this analysis considers the larger, regional fishery and its long-term health. Potential impacts are considered over time with no particular start date. As stated in Section 3.13.1, NEPA requires consideration of "economic" and "social" effects (40 CFR Section 1508.8) but CEQA only requires evaluation of population, housing, social, and/or economic effects such that they may result in physical impacts, or an evaluation as to whether economic and/or social effects may determine the significance of physical changes. No housing would be constructed with this project and no increase in population is anticipated, so there is no applicable CEQA analysis. Furthermore, economic and social effects would not create physical impacts on the environment, and the significance of environmental effects is not influenced by economic and social effects. Growth inducement is discussed in Section 6.2. NEPA does not require explicit definition of significance criteria. Issues related to environmental justice are discussed in Section 3.13.6 of this report.

3.13.3 ENVIRONMENTAL CONSEQUENCES

Overall, the social and economic effects of the action would be beneficial. The lagoon represents a valuable coastal wetland with substantial biological and ecological resources. It provides habitat for sensitive plants and wildlife, including nursery habitat, as well as over 7 miles of recreational trails within the reserve. The potential reuse of material would provide beaches with wider and larger sand areas, and beaches with exposed cobblestones would be covered with sand. Expansive sandy beaches provide greater recreational opportunities and opportunity for public access, and enhance tourism in the region. Public property and infrastructure would have additional protection from wave action and storm events while sand remains at the reuse/placement locations.

Lagoon Restoration

Alternative 2A–Proposed Project

Temporary

It is assumed that the design and construction work associated with the lagoon restoration would be by civilian firms that would largely draw their employees from a labor pool within San Diego County. However, dredge personnel may come from outside the region since many specialized dredgers are based on the east coast. Given the temporary nature of the construction, no increase in population would occur from workers relocating to the area, and no increase in demand for local housing is anticipated to occur. Most of the construction work would be performed by workers residing within commuting distance of the lagoon, such that the demand for temporary construction worker housing would be minimal.

During construction, localized, temporary socioeconomic impacts could potentially accrue due to the proximity of sensitive receptors (such as residential areas) to the limits of lagoon restoration construction. These localized socioeconomic impacts may include changes to community character and could result from construction noise, a temporary degradation of air quality, or a decrease in traffic LOS and/or accessibility to socially important land uses. Temporary impacts to employment and local economy would be slight, but beneficial, and the overall temporary impacts to employment, income, population, and housing would be less than significant.

Permanent

With regard to permanent impacts, the lagoon restoration would not result in a permanent population increase or change in housing demand. Economic output as a result of lagoon

restoration is anticipated to be beneficial, although slight, as community members and visitors would have a new opportunity to witness and enjoy a more dynamic and diverse lagoon ecosystem. Therefore, impacts on existing regional population and associated housing, employment rates, and regional economy would largely remain unchanged as a result of the lagoon restoration and would be less than significant.

Alternative 1B

While the details of design and construction activities would be slightly different from Alternative 2A, the impacts of Alternative 1B on existing regional population and associated housing, employment rates, and regional economy would largely remain unchanged and would be less than significant.

Alternative 1A

While the details of design and construction activities would be slightly different from Alternative 2A, the impacts of Alternative 1A on existing regional population and associated housing, employment rates, and regional economy would largely remain unchanged and would be less than significant.

No Project/No Federal Action Alternative

No adverse impacts would occur to local socioeconomics as a result of the No Project/No Federal Action Alternative. However, the No Project/No Federal Action Alternative would not provide an economic benefit and the lagoon would remain in its current state. Recreational opportunities and tourism value would not experience a beneficial impact, and no impact would result.

Materials Disposal/Reuse

Previous interactions with commercial fishermen and their representatives during the 2001 and 2012 RBSPs have suggested that beach replenishment and offshore materials removal/disposal may result in impacts to three areas of stakeholder concern. These concerns focus on the potential for loss of resources and income and can be summarized as follows:

- Sand placed on the beaches could move from the beaches onto sensitive habitat areas, causing immediate loss of commercial resources associated with these habitats (e.g., lobster, crab, urchin), effectively excluding this area from fishing for some period of time, otherwise known as creating a “preclusion area.” Additionally, turbidity plumes

from the project would cause commercial resources to move from the area for some period of time, effectively causing area preclusion.

- Movement of sand from the beaches onto sensitive subtidal habitat areas could adversely affect nursery habitat, causing significant long-term damage (through population reduction) to the fishery.
- Materials transport and placement operations could lead to loss of fishing gear and equipment as well as limit access to fishing areas.

These three concerns (area preclusion, adverse effects to nursery habitat, and gear loss/limit access) are each discussed below. All concerns are applicable to materials placement activities in the offshore for stockpiling, nearshore at Cardiff, and onshore on-beach in the event barges are used. Materials disposal/reuse on-site would not affect commercial fisheries. Turbidity and nearshore habitat loss concerns are less applicable to the offshore disposal at LA-5 for the materials placement option under Alternative 1A. Likewise, gear conflicts and access concerns are less applicable to onshore on-beach materials disposal/reuse depending on the use, frequency, and route of materials barges.

Alternative 2A–Proposed Project

Commercial Fishing Resources/Area Preclusion

Materials disposal/reuse activities would be similar to those assessed for the 2012 RBSP, although less expansive in geographic scope with respect to individual onshore beach disposal sites and would include fewer offshore sites. Based on the analysis in the 2012 RBSP EIR/EA, the level of economic activity associated with the commercial fishery in San Diego County, and the various scenarios described in Chapter 2, significant regional or localized impact is unlikely in the San Diego area or the North County subarea fisheries. Impacts may be felt at the individual fishing operation level as a result of displacement from favored fishing locations; however, the individual operational level impacts cannot be accurately quantified with the currently available data.

Though the materials disposal/reuse process would extend for approximately 10 months, only a small area of the 60-mile coastline would be affected at any one time. That is, with (possibly) two tugboats and four barges, with up to 2,500 cy of sand on each barge, operational for the project, the actual area that would be affected at any point in time would be localized and not preclude other areas from being fished. Additionally, as described in Section 2.10, SELC is committed to coordinating barge operations with USCG so that, via timely notification, areas can be fished the maximum amount of time and only the area of active dredging would be restricted

(PDF-49). Thus, **no significant long-term or substantial adverse preclusion impacts would occur as a result of the dredging operations.**

Direct impacts from materials placement would not cause significant impacts to the lobster, urchin, squid, sheephead, or halibut fisheries. Turbidity and siltation from offshore disposal would be localized and short term (Sections 3.2 [Hydrology] and 3.4 [Water and Aquatic Sediment Quality]). The area that would be affected by turbidity and siltation represents a very low percentage of available habitat, and direct placement activity at any one location would be limited to offshore SO-5/SO-6 and nearshore Cardiff. After stockpiling, offshore sites may remain at slightly different elevations from surrounding areas but would be gradually sloped and are not expected to affect lobster movement or distribution. Therefore, while increases in turbidity and siltation from disposal at the offshore stockpile sites and/or nearshore Cardiff would occur in the short term, no long-term significant impacts are expected to commercial species. Localized decreases in visibility due to turbidity from disposal or from the beaches could affect diving conditions. This effect would be localized and of limited duration, and would not be significant to the urchin fishery. Turbidity and siltation from disposal may affect squid spawning sites, but these impacts would be localized and short term, and would affect only a small percentage of available spawning areas along the coast. No long-term significant impacts are expected to the commercial squid fishery. Redistribution of sand from the beaches could temporarily cover some low-lying reef areas, causing some short-term loss of potential sheephead habitat. However, sheephead are highly mobile and the amount of low-lying reef that would be affected is small and the loss temporary. Therefore, **although some temporary impacts to low-lying reefs may occur, this effect to sheephead would be considered less than significant and not substantially adverse.**

California halibut utilize the nearshore area and lagoons as feeding and nursery areas. The proposed project could potentially affect this species. The project has been designed to avoid significant long-term impacts to the coastal lagoons (in fact, it is meant to improve the lagoon ecosystem) so no impacts to the lagoon nursery areas are expected. Some areas of the nearshore may be temporarily covered by sand moving off the beaches onto the subtidal area. This is not significant to halibut as their habitat is the sand bottom and they are well adapted to changes in nearshore sand levels. Any dislocation of halibut due to turbidity or sand movement would be localized and temporary, and is considered less than significant. **The impacts of Alternative 2A to commercial fishing resources and effects to area preclusion are considered less than significant and not substantially adverse.**

Gear Loss

Vessel traffic and barge operations have the potential to conflict with traps. To reduce the potential for trap loss and conflict, and to minimize impacts associated with the incompatibility of materials placement and fishing activities, a 300-foot buffer would be designated around the lane designated for barges to use to reach the designated disposal/reuse areas. Global Positioning System (GPS) tracking would be employed to track disposal activity (PDF-52). In the event that gear is damaged or destroyed inside of the identified 300-foot buffer, compensation would be the responsibility of the contractor. As described in Section 2.10, SELC has committed to coordination with USCG and the dredge operator to minimize, to the extent possible, gear conflict and disruption of fishing locations (PDF-49). **Potential impacts of Alternative 2A on commercial fishing gear would be minimized by these processes, and would, therefore, be less than significant and not substantially adverse.**

Nursery Habitat

Disposal activities have been designed to minimize effects on kelp and kelp habitat. Disposal at offshore sites would cause localized turbidity and siltation. However, the placement sites have been designed to provide a minimum 500-foot buffer zone from kelp beds and potential kelp habitat (PDF-46). This buffer zone is judged to be sufficient as the distances from the disposal sites would generally be much greater than 500 feet from these resources; the duration of turbidity would be intermittent and reach potential resources for a few days at most. Therefore, the impact is considered less than significant. **Turbidity from the beach sites and subsequent redistribution of the beach sand to the nearshore is anticipated to be less than significant and not substantially adverse.**

Impacts to the recreational fishing and diving include potential loss of resources, exclusion from fishing/diving areas, and decreased visibility for divers due to turbidity plumes. Sport diving for lobster and fishing for halibut in the nearshore area could be affected by the project as sand moves off of the disposal sites. Turbidity from the beaches and presence of disposal machinery would preclude use of small areas for short periods but adjacent areas would remain available for use. In the longer term, access for shore diving and surf fishing may improve with the placement of sand on the beaches. Sport fishing boats could be affected by disposal operations and turbidity plumes from the beaches. Some loss of sport fishing areas would occur during actual disposal operations but this area would be substantially less than the available nearshore areas for sport fishing and short term in nature at individual disposal locations. **Potential direct and indirect impacts of Alternative 2A on nursery habitat, kelp beds, turbidity, and recreational fishing would be less than significant and no substantial adverse impacts would occur.**

Alternative 1B

Impacts under Alternative 1B would be similar to those described for the proposed project. Due to the decrease in the volume of materials for disposal/reuse, there would be fewer trips required, less sand movement, fewer turbidity issues, and a possible shorter timeframe for these activities, making impacts of Alternative 1B altogether less, albeit slightly. **Impacts of Alternative 1B on commercial fishing resources and effects to area preclusion are considered less than significant. No substantial adverse impacts would occur.**

Alternative 1A

Impacts under Alternative 1A, would be similar to those described for the proposed project. However, concerns regarding turbidity, habitat loss, and nursery habitat loss with regard to nearshore/onshore activities would not occur. Although gear conflict concerns surrounding offshore disposal would remain, there are poor fishing conditions surrounding LA-5 as disclosed earlier in this document, and **impacts to commercial fishing would be less than significant. No substantial adverse impacts would occur.**

No Project/No Federal Action Alternative

No adverse impacts would occur to commercial fishing resources and area preclusion, gear loss, and nursery habitat as a result of the No Project/No Federal Action Alternative, and **no impact would result.**

3.13.4 AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

A number of features have been incorporated into the project to avoid and/or minimize impacts to commercial fisheries and recreational uses during materials placement. These features include establishing buffers around sensitive resources and active construction access areas, as well as coordination with USCG to minimize conflicts during ocean-based activities. No unavoidable adverse effects or significant impacts on socioeconomics would occur as a result of implementation of any of the alternatives during lagoon restoration and/or materials disposal/reuse; no mitigation measures are required.

3.13.5 LEVEL OF IMPACT AFTER MITIGATION

CEQA: Effects of the proposed project on socioeconomics would be largely beneficial in terms of employment and economic output; no impacts are anticipated to population or housing. In addition, there would be no long-term significant impacts to commercial fisheries.

NEPA: The proposed project would not have a substantial adverse impact on socioeconomics. Issues related to environmental justice are discussed in Section 3.13.6 of this report.

3.13.6 ENVIRONMENTAL JUSTICE ANALYSIS

Protection of Children from Environmental Health Risks and Safety Risks

On April 21, 1997, President Clinton signed Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks (62 *Federal Register* 19885 (1997)). The policy of the executive order states that:

A growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health risks and safety risks. These risks arise because: children's neurological, immunological, digestive, and other bodily systems are still developing; children eat more food, drink more fluids, and breathe more air in proportion to their body weights than adults; children's size and weight may diminish their protection from standard safety features; and children's behavior patterns may make them more susceptible to accidents because they are less able to protect themselves. Therefore, to the extent permitted by law and appropriate, and consistent with the agency's mission, each Federal agency:

- (a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and
- (b) ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

To assess the potential for impacts to disproportionately accrue to children, it is important to document those land uses surrounding the lagoon and disposal sites that are likely to contain a higher proportion of children throughout the course of a day. For the purposes of this analysis, children are considered those individuals who are under 18 years of age and the sensitive land uses identified include schools, parks, and daycare centers within 0.5 mile from the proposed project sites. It is considered that health and safety risks to children, if they were to occur as part of the restoration and disposal activities, would occur within these buffer zones.

Table 3.13-7 presents the child-focused land uses near the proposed lagoon and disposal/reuse sites for all alternatives and scenarios. Existing land use maps were used to identify these land uses. Schools and parks are relatively well documented on such maps. Daycare centers vary in

Table 3.13-7
Schools, Parks, and Daycare Centers within 0.5 Mile of San Elijo Lagoon and Materials Placement Sites Study Areas

Geography		Schools	Parks	Daycare Centers
San Elijo Lagoon Study Area		The Rhoades School Solana Vista Elementary Skyline Elementary Earl Warren Middle School Sanderling School AGVI Academy for Gifted Children	Cardiff State Beach Tide Beach Park Glenn Park San Elijo State Beach Solana State Beach	Solana Beach Child Development Center Encinitas Country Day School – Temple Solel
Materials Disposal Sites	Cardiff		Glenn Park Solana State Beach Tide Beach Park	
	Moonlight	Montessori Children's house Head Start Center Oasis Community (Organic) School Paul Ecke-Central Elementary School	Stonesteps Beach Access Orpheus Park Cottonwood Creek Park Oakcrest Park East Sea Cliff County Park Encinitas Viewpoint Park Swamis Seaside and Beach Parks H, I, and J Street Viewpoints D Street Beach Access Mildred Macpherson Park Leucadia Beach Moonlight Parcels Leucadia Roadside Park	
	Solana Beach	Hanna Fenichel Center Fusion Academy	Fletcher Cove Park North Bluff Preserve Cardiff State Beach North Seascape Surf Beach Park Dog Beach Del Mar	Solana Beach Child Development Center
	Leucadia	Leucadia Children's School Peterson Montessori Intelligent Choice Educational Center	Beacon's Beach Leucadia Oaks Park Grandview Beach Leucadia Roadside Park	Lovechild Center
	Torrey Pines		Torrey Pines State Reserve	

Source: Google Earth 2012.

size and can include in-home daycare providers, stand-alone institutional centers, or larger centers associated with another facility such as a church or larger school. Larger facilities or those associated with other facilities are typically more commonly documented on land use maps. Smaller facilities may not be included in mapping, but these are not necessarily dedicated child-focused land uses and are more similar in nature to residences than schools with respect to the number of children present on-site.

Areas of construction and disposal/reuse would be restricted during project implementation for safety reasons and no long-term health and safety effects would occur after the onshore disposal areas were reopened for public use. Under NEPA, to which Executive Order 13045 applies, no short-term, substantially adverse noise impacts during construction are likely to extend into neighborhoods off-site. There is no evidence that children are likely to be subject to disproportionate impacts through learning disruption or subject to health and safety effects. In summary, under NEPA, no disproportionate impacts to environmental health risks and/or safety risks to children are likely to occur with project implementation.

Environmental Justice

This section summarizes potential human health, economic, and social impacts from sand replenishment with respect to issues of environmental justice, as mandated by Executive Order 12898. The “Executive Order on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” issued on February 11, 1994, requires that the relative impacts of federal actions on minority populations (including Native American tribes) and low-income populations be addressed to avoid the placement of a disproportionate share of adverse impacts of these actions on these groups. On April 21, 1995, the Secretary of Defense submitted a formal environmental justice strategy and implementation plan to EPA.

To comply with Executive Order 12898, this EIS/EIR process included gathering demographic and income information from the U.S. Census Bureau to identify areas of low-income and/or high minority populations in the areas contiguous with the lagoon and disposal/reuse sites that would potentially be exposed to impacts, as well as geographically dispersed populations that may be affected by impacts to resources within the study area. Impacts to these areas and resources were then evaluated with regard for disproportionate impacts to low-income and minority populations.

As discussed in Section 3.13.1, only one census tract (173.04), located in Solana Beach, has a percentage of minority residents that suggests that it may be a community of concern with regard to proximal and disproportionate human health, economic, and social impacts. (Upon closer analysis, only block group 2 [173.04.02] within this census tract has a percentage of minority

residents over 50.0 percent. Block group 2 includes the area bounded by Stevens Avenue, Via de la Valle, I-5, and Lomas Santa Fe Drive.) Native American stakeholders and tribal members may be disproportionately affected by impacts to cultural resources.

Environmental Consequences

Overall, the human health, economic, and social impacts associated with the project would be beneficial. Under NEPA (to which Executive Order 12898 applies), some temporary substantial adverse impacts would occur during construction activities, and a permanent substantially adverse visual impact would occur (Alternative 2A). The following sections recapitulate the impacts with a human health, economic, or social nexus that would remain substantially adverse after mitigation, as well as an evaluation as to whether the impact would accrue disproportionately to environmental justice populations.

Lagoon Restoration

Alternative 2A–Proposed Project

Temporary

As stated in Section 3.9.3, visitors at the San Elijo/Kilkenny vista point, users of the trail system within San Elijo Lagoon, and visitors to the Nature Center would experience a strong visual contrast during construction because of the overall change and likely perceived degradation in visual character. Since these visitors would have higher scenic expectations, the contrast would be strong as a result of construction activities. Overall, the construction phase would represent a temporary, but significant change in the visual quality and character of the lagoon for key viewers. The temporary impact to trail users and vista point viewers would be substantial and adverse.

As stated in Section 3.9.3, construction of the new inlet and CBFs on either side would be highly visible and a contrast to the current beach character. The CBFs would consist of two relatively short and low rock features along the outer reach of the tidal inlet channel. While efforts would be made to soften the appearance via naturalized finish and partial to full burial of the feature (depending on the season), the CBFs would introduce a man-made linear feature perpendicular to Coast Highway 101 extending several feet toward the ocean and the contrast would be strong for some beach users. Construction of the new inlet and CBFs would result in substantial and adverse impact.

With regard to impacts to visual resources, the users associated with adversely affected key views are not predominately minority and/or low-income populations. The affected vista point, trails, and Nature Center attract visitors from throughout the region and impacts would not disproportionately accrue to environmental justice populations who may visit. Furthermore, demographic analysis suggests that nearby populations to these key views are not environmental justice populations. Visual impacts associated with constructing and establishing the inlet and CBFs would accrue similarly, as the beach draws visitors from throughout the region and nearby populations are not considered environmental justice communities; substantial and adverse visual impacts would not accrue disproportionately to environmental justice populations.

As stated in Section 3.10.3, the road along Coast Highway 101 across the mouth of the lagoon would be demolished and replaced with the proposed bridge in two parts. Traffic analyses suggest that the daily segment operations on the roadways affected by the bridge lane closure would continue to operate at acceptable LOS C or better with the following exceptions:

- Coast Highway 101 – South of Chesterfield Drive (LOS E)
- Lomas Santa Fe Drive – Solana Hills Drive to I-5 (LOS F)

The degradation of these two roadway segments would exceed the allowable thresholds during bridge construction activities and would be considered a temporary substantially adverse impact.

With regard to traffic impacts, Coast Highway 101 is a transportation corridor used by regional residents and a degradation of LOS along this corridor would affect all regional users equally, regardless of race, ethnicity, or income. Furthermore, nearby residents along this transportation corridor are not considered environmental justice populations based on demographic analysis. The portion of Lomas Santa Fe Drive between Solana Hills Drive and I-5 that would experience a degradation in LOS is in proximity to census tract 173.04 (as well as its block group 2, which represents a more specific geography for the identified minority community in Solana Beach). This transportation corridor is likely used by the nearby environmental justice community as residents travel to/from their homes. However, this portion of Lomas Santa Fe Drive is also likely used by non-environmental justice communities north of the corridor, as well as regional users traveling along Lomas Santa Fe Drive who may be visiting Fletcher Cove or other portions of Solana Beach. Impacts occurring along Lomas Santa Fe Drive would accrue to nearby environmental justice populations, but this accrual would not be disproportionate; an environmental justice impact would not occur.

Permanent

As stated in Section 3.9.3 and above, the establishment of a new inlet and CBFs on either side would be highly visible and a contrast to the current beach character. The new inlet and CBFs would result in a substantial and adverse impact.

Visual impacts associated with the permanent CBFs would accrue similarly, as the beach draws visitors from throughout the region and nearby populations are not considered environmental justice communities; substantial and adverse visual impacts would not accrue disproportionately to environmental justice populations.

Alternative 1B

Temporary

Similar to Alternative 2A, visual impacts would be substantial and adverse for trail users and vista point users due to the multi-year duration of construction. However, the affected vista point, trails, and Nature Center attract visitors from throughout the region and impacts would not disproportionately accrue to environmental justice populations who may visit. Furthermore, demographic analysis suggests that nearby populations to these key views are not environmental justice populations.

LOS degradation of two roadway segments would exceed the allowable thresholds during bridge retrofit activities and would be considered a temporary substantially adverse impact. However, Coast Highway 101 is a transportation corridor used by regional residents and a degradation of LOS along this corridor would affect all regional users equally, regardless of race, ethnicity, or income. Furthermore, nearby residents along this transportation corridor are not considered environmental justice populations based on demographic analysis.

Permanent

The details of design would be slightly different from Alternative 2A and no permanent, adverse human health, safety, or social impacts would remain after mitigation.

Alternative 1A

Temporary

LOS degradation of two roadway segments would exceed the allowable thresholds during bridge retrofit activities and would be considered a temporary substantially adverse impact. However, Coast Highway 101 is a transportation corridor used by regional residents and a degradation of LOS along this corridor would affect all regional users equally, regardless of race, ethnicity, or income. Furthermore, nearby residents along this transportation corridor are not considered environmental justice populations based on demographic analysis.

Permanent

The details of design would be slightly different from Alternative 2A and no permanent, adverse human health, safety, or social impacts would remain after mitigation.

No Project/No Federal Action Alternative

No adverse impacts would occur to human health, safety, or social values as a result of the No Project/No Federal Action Alternative.

Materials Disposal/Reuse

Alternative 2A–Proposed Project

Temporary

No temporary adverse impacts would remain substantial and unavoidable with regard to human health, safety, or social values during materials disposal/reuse associated with Alternative 2A. Thus, no temporary substantial adverse environmental justice impacts related to materials disposal reuse would occur due to implementation of Alternative 2A.

Permanent

No permanent adverse impacts would remain substantial and unavoidable with regard to human health, safety, or social values as a result of materials disposal/reuse associated with Alternative 2A. Thus, no permanent substantial adverse environmental justice impacts related to materials disposal reuse would occur due to implementation of Alternative 2A.

Alternative 1B

No temporary or permanent adverse impacts would remain substantial and unavoidable with regard to human health, safety, or social values as a result of materials disposal/reuse associated with Alternative 1B. Thus, no temporary or permanent substantial adverse environmental justice impacts related to materials disposal reuse would occur due to implementation of Alternative 1B.

Alternative 1A

No temporary or permanent adverse impacts would remain substantial and unavoidable with regard to human health, safety, or social values as a result of materials disposal/reuse associated with Alternative 1A. Thus, no temporary or permanent substantial adverse environmental justice impacts related to materials disposal reuse would occur due to implementation of Alternative 1A.

No Project/No Federal Action Alternative

No adverse impacts would occur to human health, safety, or social values as a result of the No Project/No Federal Action Alternative. Thus, no temporary or permanent substantial adverse environmental justice impacts related to materials disposal reuse would occur due to implementation of the No Project/No Federal Action Alternative.

Avoidance, Minimization, and Mitigation Measures

No substantial adverse impacts would accrue disproportionately to environmental justice communities; no mitigation measures are required.

Level of Impact after Mitigation

NEPA: The proposed project would not have an adverse impact on environmental justice.